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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,941

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Louis Mazuy

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EXAMINER

MONDT, JOHANNES P

ART UNIT

PAPER NUMBER

3663

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,941	Applicant(s) MAZUY, LOUIS	
	Examiner JOHANNES P. MONDT	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1 Form 1449</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendment filed 8/3/09 forms the basis for this action. In said Amendment applicant filed a Replacement Sheet for Figure 1, substantially amended claims 8-14 and added new claim 15. Comments on remarks submitted with said Amendment are included below under "response to Arguments".

Information Disclosure Statement

2. The examiner has considered the items listed in the information Disclosure Statement filed 8/3/09. A signed copy of Form PTO-1449 is herewith enclosed.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. **Claims 8-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, “the axial outward extension” (line 15 of claim 8) lacks antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Prior Art as Admitted by Applicant in the Specification, henceforth referred to as Applicant’s Admitted Prior Art or “AAPA” (previously cited). N.B.: The rejections are offered subject to the noted indefiniteness under 35 USC 112, second paragraph as set forth in section 3 above, to the best of examiner’s understanding.

As Applicant’s Admitted Prior Art, Applicant teaches (Figure 1, page 2, line 21 – page 4, line 15) and page 8, lines 10-11, page 8, line 20 – page 10, line 17) a device **1** (page 8, l. 29+) *capable* of moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head (page 8, lines 22-25), comprising:

a control rod **6** (page 9, lines 3-12 and Figure 1) furnished with an arrangement capable of attaching the control bar at one axial end (loc.cit.);

an electromechanical arrangement (comprising magnetic coils **5a**, **5b**, **5c**, **7a** and **7b**; page 8, line 31 – col. 9, l. 1, and Figure 1) *capable* of moving the control rod in an axial direction (loc.cit.); and

a sealed containment **2/3/4** (Figure 1 and page 8, lines 25-27) that is *capable* of being attached to the vessel head in a penetration opening comprising:

an adapter tube **2** (Figure 1 and page 89, lines 28-30 and page 10, lines 1-3) welded into the opening of a vessel head (page 8, lines 22-25);

a tubular mechanism housing **3** (Figure 1 and page 8, lines 28+) connected to the adapter (interpreted as “adapter tube”) on which is mounted the electromagnetic arrangement for moving the control rod (loc.cit.); and

a tubular sheath **4** (Figure 1, page 8, lines 28-30) *configured to have the capability* to allow the control rod to be axially moved between two extreme positions, closed at a first end and open at a second end (Figure 1 and page 3, lines 10-15), attached in the axial outward extension of the housing (interpreted as “tubular mechanism housing”) (Figure 1 and page 3, lines 15-20), by the tubular sheath’s second, open, end, wherein the adapter **2** and the mechanism housing **3** are made in a single piece (met in Fig.1, while “made in a single piece”, as far as the limitation is not merely a product-by-process limitation and as such has any patentable component, in broadest reasonable interpretation meaning: “abutting and attached”), and the housing **3** comprises, at an axial end opposite the adapter **2** (bottom end facing the adapter) an internal tapping in the form of a tapped portion along the inside of **3c** (Figure 1 and page 9, line 20+:

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internal tapping met by "tapped part") and a sealing lip **3c** in a shape of a portion of a torus (3c is "torus-shaped sealing lip" because it has a toroidal topology: Figure 1 and page 10, line 4-6) surrounding the housing (Figure 1) and made in an external surface having a cylindrical free joining surface having as an axis the axis of the housing (Figure 1 and page 3, lines 1-3), and that the tubular sheath **4** comprises, at the second, open, end, a thread along the side of 4a facing 3a: Fig. 1) matching the tapping **3a** of the housing attached by screwing in a coaxial position into the housing (Figure 1 and page 9, lines 19-23), and a sealing lip **4b** (Figure 1 and page 9, lines 19-25) in a shape of a portion of a torus (being of toroidal topology) of dimensions matching those of the sealing lip **3b** of the housing having a cylindrical free joining end surface having as axis the sheath axis (Figure 1 and page 9, lines 25-33), the sealing lips of housing and sheath having free ends facing one another in final structure (including screwing and welding) (Figure 1 and page 9, lines 21- page 10, line 13), while the weld seam is annular with filler metal coaxial with housing and sheath (page 2, l. 25+, especially l. 28 for "filler metal") while examiner takes official notice that depth parallel to the axis of the joint and width perpendicular to the latter that are inherently "substantially" constant along the circumference for any "quality weld" as disclosed to be conventional for welding co-axial cylindrical parts in an axial direction. In this regard applicant is reminded that "substantially" is a very broad limitation (MPEP 2173.05(b) and case law referred to therein).

Furthermore, applicant is reminded that the limitations “for moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head” (lines 1-3), “for attaching the control bar at one axial end” (lines 4-5), “for moving the control rod in an axial direction” (lines 6-7), “attached to the vessel head” (line 8), “welded into the opening of the vessel head” (page 8) “for moving the control rod” (line 12), and “configured to allow the control rod to be axially moved between two extreme positions” (lines 13-14) limit intended use only. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963). In the underlying case the capability of performing the intended use is in evidence or indicated in the description of the admitted prior art (see the various references to column and line numbers provided above in the text of the rejection).

On claim 9: the tubular-shaped adapter **2** and the mechanism housing **3** are in a coaxial disposition (page 2, line 25 – page 3, line 2). The limitation that both housing and adapter are “butt welded” is a product-by-process limitation. The limitation is only of patentable weight in as much as the method distinguishes the final structure, and to the extent not impacting final structure are taken to be product-by-process limitations and non-limiting. A product by process claim is directed to the product per se, no matter how they are actually made. See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re

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Marosi et al, 218 USPQ 289, 292 (Fed. Cir. 1983), and In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make clear that it is the patentability of the final structure of the product “gleaned” from the process steps that must be determined in a “product-by-process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. In the underlying case the structural implication fails to further limit the invention as recited by claim 8 in this regard, in view of the limitation “wherein the adapter and the housing are made in a single piece” (lines 16-17 of claim 8); while the limitation “to form an integrated housing attached to a vessel head by the adapter tube” is a limitation of intended use. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963). In the underlying case the integrated housing is met by the adapter and housing that are made in a single piece. No further structural implications ensue from the limitation other than that the structure is capable to be used for attaching a vessel head to the integrated housing by the adapter, which is met given the proper dimensions of a vessel head. It is noted in this regard that the claim language does not positively recite “vessel head” as being comprised in the claimed device.

On claim 10: applicant further admits that the adapter is made of a nickel alloy (page 2, lines 25-30), while applicant also disclosed within the context of a discussion of the disadvantage of the mounting method of the prior art that the invention addresses that in the prior art nickel alloy for the adaptor and stainless steel for the mechanism housing are conventional material selections (see page 10, lines 6-11).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. ***Claim 11*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) as applied to claim 8, in view of Gul (US 6,457,857 B1) (previously cited). As detailed above, claim 10 is anticipated by AAPA. AAPA does not teach the further limitation on material embodiment of the tubular sheath. However, given the material selection of stainless steel for the tubular mechanism housing, it would have been obvious to select stainless steel also for the tubular sheath so as to reduce thermal stress between said housing and said sheath, as known by those of ordinary skill in the art of components providing housing in the metal art, as witnessed for instance by Gul, who, in a patent on housing and support for a device subject to variable temperature (class 387, subclass 208; i.e., housing or support for thermal measuring and testing apparatus), comprising a sleeve 40 for a tubular sheath 52 positioned so as to abut the inner wall of said sleeve, teaches both sleeve

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and sheath to be made of the same material, thereby ensuring sleeve and sheath to have the same coefficient of thermal expansion so as not to worsen thermal stress (col. 7, l. 33-37 and Figure 5A). Considering especially the variety of thermal conditions under which the device by AAPA has to operate (variable state of operation of the nuclear reactor) it would have been entirely obvious to one of ordinary skill in the art to select the same stainless steel material for the tubular sheath as for the housing so as not to cause additional thermal stress. *Motivation* to include the teaching by Gul in this regard in the device by AAPA derives immediately from the resulting avoidance of additional thermal stress. The combination has reasonable expectation of success because nothing more than the selection of a material similar to both the material of the tubular sheath in the prior art and identical to material in abutting and neighboring components is involved in implementing the combination. Because the sealing lip of the integrated housing and the sealing lip of the tubular sheath are part of said housing and sheath, respectively, the teaching by Gul immediately applies to the selection of the same, stainless steel, material embodiment for both sealing lips as well, because Gul teaches *the* sleeve and *the* sheath to be made of stainless steel, while any other choice of material for either lips would defeat the stated reason for selecting the same material for both, as discussed supra.

8. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA as applied to claim 8, in view of Abe (document no.: JP-11202076 A) (see IDS of Japanese original with English title, abstract) (full text has been obtained through the Japanese Patent Office, Advanced Industrial Property Network).

As detailed above, AAPA anticipates claim 8. AAPA does not teach the further limitation defined by claim 15.

However, it would have been obvious to include said further limitation in view of Abe, who, in a patent document on a housing for a control rod, hence analogous art (see English title and English abstract) teach the housing (met by 'latch housing' 13; see English abstract) and tubular shaped adapter (met by 'drive shaft housing' 11), such that said housing has a bottom end (upper end in Drawing 1), the tubular shaped adapter has an upper end (its lower end in Drawing 1) having a section equal (interpreted as "abutting and sized equal") to the section of the bottom end of the housing, said upper end and bottom end placed end to end against one another and welded to one another (see weld 15 in "Description of Drawings", said weld being at the lower end of the adapter 11) [Examiner Note: said "circumference welding" 15 is a butt-weld as it welds abutting faces to one another].

Motivation for the teaching by Abe is spelled out explicitly (see English abstract: "Problem to be Solved": the prevent the stress corrosion cracking of a drive shaft housing and the connection part of the latch hosing (interpreted as "housing") in a control rod drive device of a pressurized water reactor", which provides ample motivation to combine since AAPA is a control rod drive device for a pressurized water reactor while mitigating corrosion cracking of any component in a nuclear reactor is a generic advantage.

Response to Arguments

9. Applicant's arguments filed 8/3/09 have been fully considered but they are not persuasive of patentability:

- a. Drawings Objection: has been overcome by Replacement Sheet; an additional objection, is, however, included in the instant office action because of a missing "Prior Art" label for prior art Figure 1.
- b. Rejection of claims 8-11 under 35 USC 112, second paragraph as set forth in section 5 of the prior Office action: by amendment "vessel head" is clearly not a component of the claimed invention ("adapted to be attached..."), i.e., the claimed invention is drawn to the subcombination. Therefore, the rejection has been overcome by amendment.
- c. Rejection of claims 8-11 under 35 USC 112, second paragraph as set forth in section 6: said rejection must stand, because, as before, "the axial outward extension" in the expression "the axial outward extension of the housing" ("the housing" understood as "the tubular mechanism housing") lacks antecedent basis.
- d. Rejection under 112, second paragraph, as set forth in section 7: has been overcome by amendment.
- e. Rejection under 35 U.S.C. 112, second paragraph, as set forth in section 8: has been overcome by amendment.
- f. Rejection under 35 U.S.C. 102(b) of claims 8-10 as set forth in section 10 of the prior Office action: said rejection must stand for claim 8 in the absence of any argument of traverse of its rejection. With regard to claim 9, applicant's

argument that the limitation that adapter and housing are "butt welded" further limits, given the limitation in claim 8 that the adapter and the housing are made in a single piece, is not persuasive because the claim does not relate the butt welding of the respective adapter and housing to each other, but merely repeats the formation of an integrated housing. Applicant's argument that in the AAPA the adapter is not butt welded with the mechanism housing does not address the claim language, which only recites that the adapter and housing are butt welded. Claim 15 has been examined for the first and at the earliest possible time.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Sirica (6,152,183) (see IDS filed 8/7/06).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHANNES P MONDT/
Primary Examiner, Art Unit 3663